

CLAIMS

1. A self-attaching nut for attachment to a panel, comprising:

a central pilot portion having a bore therethrough and an annular end face surrounding said bore;

5 a flange portion surrounding said pilot portion including an annular end face substantially parallel to said annular end face of said pilot portion;

an annular groove in said end face of said flange portion including an inner side wall adjacent said pilot portion, a bottom wall spaced below a plane of said end face of said flange portion and an outer side wall extending to said annular end face of said flange portion inclined toward said pilot portion forming a restricted opening to said annular groove adjacent said annular end face of said pilot portion;

10 and

said bottom wall of said annular groove including a plurality of circumferentially spaced radial ribs integral with said outer wall of said annular groove extending radially beyond a midportion of said bottom wall of said annular groove spaced from said inner side wall, each of said radial ribs including a top face spaced from said bottom wall of said annular groove and opposed planar side faces preventing rotation of said self-attaching nut relative to a panel deformed into said annular groove against said bottom wall.

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20 2. The self-attaching nut as defined in Claim 1, wherein said top faces of said radial ribs are inclined from said outer side wall toward said bottom wall of said annular groove and said radial ribs extending radially to adjacent said inner side wall of said annular groove.

3. The self-attaching nut as defined in Claim 2, wherein said radial ribs extend to adjacent a junction of said inner side wall and said bottom wall of said annular groove.

4. The self-attaching nut as defined in Claim 1, wherein said radial ribs
5 each include a radial inner end spaced above a plane of said bottom wall of said annular groove spaced from said inner wall of said annular groove.

5. The self-attaching nut as defined in Claim 4, wherein said radial inner ends of said radial ribs are inclined inwardly forming an undercut for receiving said panel.

10 6. The self-attaching nut as defined in Claim 1, wherein said bottom wall of said annular groove extends radially substantially perpendicular to an axis of said bore.

7. The self-attaching nut as defined in Claim 6, wherein said top face of said radial ribs extend substantially parallel to said bottom wall of said annular
15 groove.

8. The self-attaching nut as defined in Claim 1, wherein said inner wall of said annular groove extends radially outwardly forming a dovetail annular groove.

9. The self-attaching nut as defined in Claim 1, wherein said top faces of said radial ribs are substantially rectangular and said bottom wall of said annular
20 groove between said radial ribs is trapezoidal having a smaller circumferential width adjacent said pilot portion.

10. The self-attaching nut as defined in Claim 9, wherein said top faces of said radial ribs are inclined from said outer side wall to said bottom wall of said annular groove.

11. A self-attaching nut for attachment to a panel, comprising:

a central pilot portion having a bore therethrough and an annular end face surrounding said bore;

a flange portion surrounding said pilot portion having an end face;

5 an annular groove in said end face of said flange portion including an inner side wall adjacent said pilot portion, a bottom wall extending radially from said inner side wall substantially perpendicular to said bore of said pilot portion and an outer side wall extending from said bottom wall to said end face of said flange portion, one of said inner and outer side walls of said annular groove inclined toward
10 the other of said inner and outer side walls forming a restricted opening to said annular groove adjacent said end face of said flange portion; and

said bottom wall of said annular groove including a plurality of circumferentially spaced radial ribs integral with said outer wall of said annular groove extending radially beyond a midportion of said bottom wall of said annular
15 groove spaced from said inner side wall, each of said radial ribs including a planar top face inclined radially inwardly from said outer wall of said annular groove and said radial ribs including opposed planar side faces extending substantially perpendicular to said bottom wall preventing rotation of said self-attaching nut relative to a panel deformed into said annular groove against said bottom wall.

20 12. The self-attaching nut as defined in Claim 11, wherein said top face of said radial ribs extend radially to adjacent said inner side wall of said annular groove.

13. The self-attaching nut as defined in Claim 12, wherein said radial ribs extend to adjacent a junction of said inner side wall and said bottom wall of said annular groove.

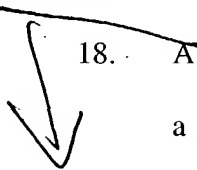
14. The self-attaching nut as defined in Claim 11, wherein said radial ribs are integrally joined to said outer side wall of said annular groove at or above a midportion between said bottom wall of said annular groove and said end face of said flange portion.

5 15. The self-attaching nut as defined in Claim 11, wherein said outer side wall of said annular groove is inclined from said bottom wall toward said pilot portion.

16. The self-attaching nut as defined in Claim 15, wherein said inner side wall of said annular groove is inclined from said bottom wall toward said outer side wall.

17. The self-attaching nut as defined in Claim 11, wherein said planar top faces of said radial ribs are substantially rectangular and said bottom wall between said radial ribs is trapezoidal having a smaller circumferential width adjacent said pilot portion.

15 18. A self-attaching nut for attachment to a panel, comprising:

 a central pilot portion having a bore therethrough and an annular end face surrounding said bore;

a flange portion surrounding said pilot portion having an end face;

an annular groove in said end face of said flange portion surrounding said pilot portion including an inner side wall adjacent said pilot portion, an annular bottom wall and an outer side wall inclined toward said pilot portion; and

a plurality of circumferentially spaced radial ribs integral with said bottom wall and said outer side wall of said annular groove, each radial rib having a top face spaced above said bottom wall of said annular groove including a radial inner end spaced from said inner side wall of said annular groove, and said radial inner ends

of said radial ribs inclined inwardly to said bottom wall of said annular groove forming an undercut to receive panel therebeneath.

19. The self-attaching nut as defined in Claim 18, wherein said annular bottom wall of said annular groove extends generally perpendicular to said bore and
5 said top face of said radial ribs extend generally parallel to said bottom wall.

20. The self-attaching nut as defined in Claim 18, wherein said top faces of said radial ribs are substantially rectangular and said bottom wall of said annular groove between said radial ribs is trapezoidal having a smaller circumferential width adjacent said pilot portion.

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